



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,744	08/28/2003	Tatsuyuki Okuno	031090	5722

23850 7590 12/15/2006

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

OLSEN, KAJ K

ART UNIT	PAPER NUMBER
----------	--------------

1753

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,744

Applicant(s)

OKUNO, TATSUYUKI

Examiner

Kaj K. Olsen

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 2 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8-28-2003; 6-29-2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (USP 5,814,719) in view of either Bhagat et al (USP 4,668,374) or Kojima et al (USP 6,007,688).
3. Suzuki discloses a limit current type sensor comprising a patterned cathode layer 2, a patterned anode layer 4 and a patterned solid electrolyte layer 3 disposed in between the cathode and anode. Suzuki further discloses a plane porous diffusion layer 1 for controlling the gaseous diffusion rate on the other surface of the cathode layer. See fig. 1 and 3 and col. 3, ll. 12-19. The cathode layer of Suzuki is shown in fig. 3 to have a portion that sticks out from the electrolyte layer 3 and connects to an external lead wire 5. The portion of that layer that is exposed to the gas environment (i.e. atmosphere) and is covered with a portion of the solid electrolyte layer would read on the applicant's defined bonding pad portion. Suzuki does not disclose the presence of a patterned gas barrier film. Bhagat discloses that the portions of an electrode that are not directly connected to the electrolyte should be shielded from gas contact by a gas barrier film 93 such that all electrolytic activity occurs at the defined contact between the electrode and the electrolyte. See fig. 10 and col. 13, ll. 22-33. Kojima also discloses that the lead portions of the electrode should be covered with a gas tight layer 92 to prevent the lead

Art Unit: 1753

portions of the electrodes from functioning as electrodes. See fig. 7 and col. 9, ll. 23-32. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to cover the bonding portion of Suzuki with a patterned gas barrier film such that this bonding portion does not function as an electrode. Moreover, because the function of the gas barriers is to control how and where gas diffusion is to occur (i.e. the diffusion of gas is to occur at other locations of the sensor), one possessing ordinary skill in the art would recognize that the exposed portion of the cathode 2 of Suzuki would not be diffusion limited by the desired diffusion element 1 and would have been motivated, in view of Bhagat and Kojima, to place a gas barrier at this bonding portion.

Allowable Subject Matter

4. Claim 1 is allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose nor render obvious all the cumulative limitations of the claim with particular attention to the patterned gas barrier film being disposed between the bonding pad and the patterned solid electrolyte layer at a boundary between the bonding pad in contact with the solid electrolyte.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ioannou et al (USP 5,366,611).


Art Unit: 1753

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Friday from 8:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AU 1753
December 8, 2006



KAJ K. OLSEN
PRIMARY EXAMINER